CB/NT 17.5.5

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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February 25, 1994

Ms. Karen Keeley
U.S. Environmental Protection Agency
Region 10
1200 6th Avenue, HW-113
Seattle, Washington 98101-3188

Re: Source Control Status Report for the Middle Waterway Problem Area, Milestone 2: Commencement Bay Nearshore/Tideflats Superfund Site

Dear Ms. Keeley:

I have enclosed a report addressing source control Milestone 2 for the Middle Waterway Problem Area at the Commencement Bay Nearshore/Tideflats (CB/NT) Superfund Site. Milestone 2 is achieved when all necessary administrative actions (e.g., permits, orders, decrees) are in place to control the major sources of problem chemicals to the the Middle Waterway Problem Area. The objective of Milestone 2 is to start a process that will lead to control of the release of problem chemicals from a source.

The Milestone 1 Report for the Middle Waterway Problem Area (submitted to EPA January 1994) lists one major source: Marine Industries Northwest. This report describes the administrative actions in place to control this major source. Seven other confirmed sources were listed in the Milestone 1 Report; when administrative actions are in place to control these sources, Ecology will describe those actions in a Milestone 4 Report for the Middle Waterway Problem Area.

Sincerely,

Dave Smith

Dave Smith
Urban Bay Action Team Supervisor
Southwest Regional Office
Toxics Cleanup Program

DS:ak
Enclosure

Milestone 2: Essential Administrative Actions in Place for Major Sources

Introduction

This report identifies the administrative actions in place to control the major sources of problem chemicals to the Middle Waterway Problem Area. The Milestone 1 Report for the Middle Waterway Problem Area (submitted to EPA January 1994) lists one major source: Marine Industries Northwest (MINW). MINW is a ship repair facility located on the northwest shore of Middle Waterway at 313 East "F" Street.

Six "other" confirmed sources were listed; when administrative actions are in place to control these sources, Ecology will describe those actions in a Milestone 4 Report for the Middle Waterway Problem Area.

Major sources are those that have been identified as such in the Commencement Bay Nearshore/Tideflats Record of Decision and the Integrated Action Plan. Control of the major sources is important because these sources are most directly linked with current sediment impacts. Milestone 2 is achieved when all necessary administrative actions (e.g., permits, orders, decrees) are in place to control the major sources of problem chemicals to the Middle Waterway Problem Area. The objective of Milestone 2 is to start a process that will lead to control of the release of problem chemicals from a source.

History and Description of Site

Companies have been repairing, constructing and rebuilding vessels at 313 "F" Street ("the site") on Middle Waterway since 1938. Foss Launch and Tug Company owned and operated a shipyard from 1938 through 1969 at the site. In 1969/70, Foss Launch and Tug Company was bought out and dissolved by Dillingham Corporation. Dillingham Corporation leased the site to Pederson Boat Company who conducted operations on the site until about 1980. Dillingham also formed a subsidiary called Foss Maritime, which only operated the tugs and barges (the site itself was controlled by the parent company). In 1981, Dillingham Corporation leased the site to MINW. In 1987, Dillingham Corporation transferred the site to Foss Maritime. FOSS Maritime has been leasing the site to MINW since the property transfer. Prior to boatyard/shipyard operations a saw mill was located on this property.

The site occupies approximately four acres with approximately 700 feet of waterfront. MINW's facility consists of: (1) an upland operation, (2) one marine railway that extends from the upland areas through a tidal zone to open water on Middle Waterway, and (3) a pier and a dry dock in Middle waterway.

The surface of the site is mostly gravel and soil with a minor amount of paving near the marine railway and dock. Blasting grit is intermingled with soil. The amount of deposition of blast grit on the grounds in unknown. Also, according to Robert Morris, Vice President of MINW, wood waste is present about two feet below the surface.

Site Activities

Vessels are hauled onto a 600-ton capacity marine railway, berthed in a 2800-ton capacity drydock, and secured to the waterfront pier to conduct repairs or conversions. Vessels are sandblasted, washed, caulked, prepared for painting, welded, and painted. In addition, engines are overhauled. In a typical month, three steel-hulled vessels are repaired or converted at the shipyard.

All abrasive blasting, hydroblasting, and painting is carried out by Pioneer Painting, a subcontractor to MINW who works on-site. An individual NPDES permit for Pioneer Painting is not necessary because it is MINW's responsibility to educate subcontractors regarding environmental requirements.

Sources of Contamination

Many of the pollutants from MINW that enter Middle Waterway are problem chemicals for the Middle Waterway Problem Area in the Commencement Bay Nearshore/Tideflats Superfund Site. They include arsenic, copper, lead, mercury, and zinc. In addition, Marine Industries Northwest is considered a *major* source of these problem chemicals to the Middle Waterway Problem Area.

Pathways include: (1) storm water contaminated by copper, lead, and zinc above marine acute and chronic water quality standards; (2) ground water seeps contaminated by copper, lead, zinc, and arsenic above acute and chronic water quality standards; and (3) storm water solids (catch basin sediments) contaminated by mercury, arsenic, copper, lead, and zinc above Commencement Bay Sediment Quality Objectives.

Spent sand blast grit and paint chips fall onto unpaved upland soil or are carried by vehicle tires onto soil. Some of the metals from grit and paint chips that mix with the soil are discharged to the waterway via storm water or subsurface ground water seepage (primarily the latter). In addition, metals slough directly into the waterway when boats are unlaunched after repair work is done.

According to MINW, all hydroblast waste water has been stored in a large tank located on one side of the dry dock. MINW's draft modified NPDES permit requires MINW to submit an engineering report for treatment/reuse of the stored water.

As shown in the table on the next page, copper, lead, and zinc, measured in storm water and ground water seeps on the site far exceed the marine acute and chronic water quality standards.

Problem Chemicals	Marine Water Quality Standards (ppb)		Average Stormwater Concentrations at MINW (ppb)	Maximum Concentrations at MINW (ppb)
	Acute	Chronic	NPDES DMRs 1991-93	3/93
TR Copper	2.9	2.9	614.7	487.0
TR Zinc	84.6	76.6	1014.6	865.0
TR Lead	151.1	5.8	467.8	240.0
TR Arsenic	69.0	36.0	<50.0 (below detection limit)	100.0 (estimate)

MINW has approximately seven catch basins, all of which have oil and debris traps installed. On December 7, 1993, Ecology conducted a sampling inspection to characterize the sediment from two catch basins within the MINW facility (catch basins #2 and #6). Sediments in both catch basins exceeded the Commencement Bay Sediment Quality Objectives for mercury, arsenic, copper, and zinc as shown in the table below. Lead also exceeded the Commencement Bay Quality Objective in one of the catch basins.

On January 25, 1994, Ecology collected sediment samples from the remaining five catch basins. Ecology is waiting for the laboratory results.

Problem Chemicals	Basin #6 (Sample Code is MINWOD)	Basin #2 (Sample Code is MINWYD)	Commencement Bay Sediment Cleanup Objective
Mercury mg/kg-dr	0.717	0.592	0.59
Arsenic mg/kg-dr	170.0	173.0	57.0
Copper mg/kg-dr	3260.0	1840.0	390.0
Lead mg/kg-dr	586.0	448.0	450.0
Zinc mg/kg-dr	3740.0	2120.0	410.0

The presence of mercury and arsenic in the catch basin sediments may be due to shipbuilding and repair activities which took place prior to 1972, when anti-fouling paints contained arsenic and mercury (paint chips from hull blasting mixed with the soil on the unpaved site).

Regulatory Actions

Ecology uses its NPDES permitting authority to regulate activities at ship building and repair facilities that could pollute waters of the state.

In June 1992, Ecology issued a NPDES permit (No. WA-004044-4) addressing pollution control. The permit requires implementation of best management practices (BMP's) and monitoring. In addition, the permit established

effluent limits for the following parameters in storm water and hydroblasting waste water: total recoverable (TR) copper, TR lead, TR zinc, oil and grease, total suspended solids, and pH.

Ecology has drafted a permit modification based on new information which is currently out for 30-day public review (comments are due March 23, 1994). There are six major changes:

(1) Due to the seep and sediment catch basin results shown in the tables above (obtained by Ecology after the permit was issued), the draft modified permit requires MINW to pave the site to prevent precipitation from seeping into contaminated soil and carrying dissolved metals into the waterway.

(2) The draft modified permit also requires MINW to collect and treat storm water after the site is paved. Ecology has sufficient evidence from other shipyards to show that storm water runoff from paved active shipyards has high levels of copper and zinc despite implementation of best management practices.

(3) The draft modified permit prohibits the discharge of pressure wash and hydroblasting waste water until a system is developed to adequately treat or reuse the waste water. Currently the hydroblast waste water is collected and pumped into a storage tank for settling, which is insufficient to meet effluent limits in the permit.

(4) The draft modified permit includes changes in the monitoring program for storm water. In addition, monitoring of drydock and marine railway receiving water was added to the permit to ensure BMP's are effective.

(5) The draft modified permit contains a compliance schedule for meeting the effluent limits.

(6) The draft modified permit delays the Acute Biomonitoring study by the amount of time it takes to complete construction and/or implement options for meeting storm water effluent limitations. This delay is consistent with WAC 173-205-030(4).

Source Control Action

MINW has implemented some best management practices, including:

- installed a system to contain dust and overspray around the marine railway;

- installed a collection system for hydroblasting waste water storage. This included a set of berms on the lower part of the marine railway and a set of scupper plugs and collection sumps on the drydock.

- installed oil and debris traps on all catch basins;

- implemented a routine maintenance program for cleaning each catch basin on a monthly basis; and

- developed a draft site-specific BMP plan.

Additional actions needed by MINW include:

- pave the yard;

- install a system to treat storm water;

- install a system to treat or reuse pressure wash and hydroblast waste water;

- install a shed to store spent grit under cover; and

- develop and implement a Spill Control Plan and complete the BMP Plan.

Sites Not Considered Major

Seven other confirmed sources were listed in the Milestone 1 Report for the Middle Waterway Problem Area; when administrative actions are in place to control these sources, Ecology will describe those actions in a Milestone 4 Report for the Middle Waterway Problem Area.